Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Enabling Next-Generation Terrestrial	)	WT Docket No. 24-240
Positioning, Navigation, and Timing and 5G:	)	
A Plan for the Lower 900 MHz Band	)	
(902-928 MHz)	)	RM-11989
	)	

COMMENTS OF ECHOSTAR CORPORATION

EchoStar Corporation ("EchoStar") respectfully submits these Comments in response to the Public Notice[1] seeking comment on NextNav Inc.'s Petition for Rulemaking ("Petition").[2] In the event the Commission finds that the 902-928 MHz band ("Lower 900 MHz Band") can be reconfigured to support 5G mobile wireless services, the normal procedure would be to offer the spectrum at auction; the Petition does not offer a compelling reason to do otherwise. And given the unusual nature of NextNav's proposal, the Commission should closely scrutinize one of the claimed benefits of NextNav's proposal (creating an alternative to the U.S. Global Positioning System (GPS)), given that there may be other technologies and spectrum bands that could serve the same purpose. NextNav's GPS alternative would apparently require only a small amount of the total spectrum that NextNav wants. It is unclear why it would serve the public interest to allow NextNav to lease the excess spectrum to wireless providers rather than auction the spectrum directly to operators that need it. The Commission should also take seriously the potential degradation or loss of spectrum for millions of unlicensed Part 15 devices that use the Lower 900 MHz band. For all of these reasons, it is unclear how granting the Petition would serve the public interest in light of the considerable potential downsides and the possibility of better alternatives.

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[1] *See Wireless Telecommunications Bureau and Office of Engineering and Technology Seek Comment on NextNav Petition for Rulemaking*, Public Notice, WT Docket No. 24-240, RM-11989, DA 24-776 (rel. Aug. 6, 2024) ("*Notice*").

[2] NextNav Petition for Rulemaking, Enabling Next-Generation Terrestrial Positioning, Navigation, and Timing and 5G: A Plan for the Lower 900 MHz Band (902-928 MHz) (filed Apr. 16, 2024).

I. THE COMMISSION SHOULD CONSIDER THE PUBLIC INTEREST BENEFITS OF AN AUCTION, DESPITE THE TEMPORARY LOSS OF AUCTION AUTHORITY

The Commission is correct to raise windfall concerns here.[3] NextNav asks the Commission to reconfigure its licenses into a nationwide contiguous allocation, and to receive more spectrum in a larger geographic area than currently held.[4] Specifically, NextNav asks the FCC to reconfigure the lower 900 MHz Band by creating a 5 MHz uplink in the 902-907 MHz band paired with a 10 MHz downlink in the 918-928 MHz band, and granting this nationwide 15 MHz authorization to NextNav[5] instead of the more typical approach of offering mobile broadband spectrum at auction. For low-band spectrum such as this, an auction could yield billions of dollars. To be sure, the loss of the Commission's spectrum auction authority has left the wireless industry in a state of uncertainty about the spectrum pipeline. EchoStar urges Congress to restore auction authority as soon as possible. But this uncertainty should not cause the Commission to potentially deprive the wireless industry and U.S. taxpayers the many benefits of holding an auction. In the event the Commission decides to move forward with NextNav's proposal, it should pursue its normal course under the Communications Act to allocate spectrum by auction.

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[3] *Notice* at 6 ("Finally, we seek comment on the windfall that NextNav might receive as a result of its proposed spectrum swap for a new nationwide license, including the acquisition of accompanying rights as a licensee and lessor, the application of flexible use and less restrictive technical rules to this band, and how the Commission should address any such windfall.")

[4] *Id.* at 5 ("NextNav proposes a spectrum 'swap,' whereby NextNav would 'return all active licenses and associated applications and petitions in exchange for a nationwide license consistent with the new 15-megahertz band plan configuration.' NextNav states that it holds approximately 64% of all B and C Block licenses and seeks to acquire all active M-LMS A Block licenses. NextNav seeks to swap post-transaction holdings of 14 megahertz for a 15 megahertz flexible use nationwide license. We seek comment on NextNav's proposal to receive more spectrum in a larger geographic area than currently held.")

[5] *See id.* at 2.

II. THE COMMISSION SHOULD CAREFULLY WEIGH THE COSTS AND CLAIMED BENEFITS OF NEXTNAV'S PROPOSAL AS A GPS ALTERNATIVE

One of the Petition's key claimed benefits is to address the vulnerabilities of GPS through the deployment of NextNav's proprietary positioning, navigation, and timing (PNT) system, Pinnacle. Yet it is not clear whether NextNav's proposal is the most efficient way to solve potential threats to GPS, particularly given that NextNav seeks free access to such a substantial amount of low-band spectrum. EchoStar agrees that GPS is critical to the U.S. economy for consumer, public safety, and national security uses, and that the Commission should do what it can to support additional and more useful positioning technologies.[6] But the Commission should also be skeptical of the claim that NextNav's technology is the only option available.[7]

The Commission should consider, among other things, whether there are alternative technologies that could supplement GPS, and if there are spectrum bands other than the Lower 900 MHz band that could support PNT services. For example, companies other than NextNav are developing positioning technologies, such as Polaris Wireless[8] and Qualcomm's Aware Positioning Services;[9] the Commission should study whether these services would perform the same function as NextNav's Pinnacle service. Would the public interest be better served by encouraging multiple alternatives to GPS, not just NextNav's?

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[6] Petition at ii.

[7] *Notice* at 2 ("NextNav discusses the vulnerabilities of GPS and states that its technology is the only viable solution for a nationwide terrestrial PNT system to complement GPS.")

[8] *See* Polaris Wireless Press Release, *Polaris Wireless Demonstrates Floor-Level Vertical Location Accuracy*, Sept. 13, 2018, *at* https://www.polariswireless.com/newsroom/press-releases/sep-13-2018/polaris-wireless-demostrates-floor-level-vertical-location-accuracy/.

[9] *See* https://www.qualcomm.com/products/internet-of-things/industrial/building-enterprise/qualcomm-aware-positioning-services#Overview.

The Commission should also examine how much spectrum NextNav needs to operate its proposed positioning services. NextNav claims that its proposal will "make a 15-megahertz block of low-band spectrum available nationwide for mobile broadband services" and that "NextNav would implement, operate, and manage additional PNT-optimized infrastructure over the 5G network."[10] If this is true, then NextNav could potentially lease spectrum or could partner with an existing wireless carrier to host NextNav's technology on spectrum the carrier owns. According to NextNav, its proposed GPS alternative "would require only a small portion of the overall spectrum capacity, leaving the remainder open for voice and data services through integration with mobile network operators' existing 5G networks."[11] Given the possible value of the Lower 900 MHz Band at auction, how would the public interest be served by enabling NextNav to "partner with wireless providers to use the excess capacity for broadband"?[12] Will NextNav be charging these wireless providers to use the Lower 900 MHz band? If so, would it be more efficient to enable wireless providers to acquire this spectrum at auction rather than pay rent to NextNav? These are important questions the Commission must consider as the record in this proceeding develops.

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[10] Petition at 21-22.

[11] *Id*. at 27.

[12] *Notice* at 5.

III. THE COMMISSION SHOULD CONDUCT FURTHER STUDY ON THE IMPACT TO UNLICENSED DEVICES

A. The Petition Fails to Justify Attributing Lesser Value to Unlicensed Uses

NextNav's Petition could remove from the ecosystem unlicensed spectrum that can help fuel "permissionless" innovation. As detailed in the *Notice*, Part 15 unlicensed devices operate in the Lower 900 MHz band, and the Commission's Part 15 rules have been crafted to enable this opportunistic use. Commission rules require M-LMS licensees (current incumbents in the Lower 900 MHz Band) to demonstrate through field tests that their systems do not cause unacceptable levels of interference to Part 15 devices.[13] The Commission should carefully consider the costs and benefits of possibly extinguishing unlicensed use in this band. As the *Notice* warns, while NextNav "recognizes that there currently are unlicensed part 15 devices operating in the Lower 900 MHz Band, [] it is unclear regarding the extent to which the proposed reconfiguration would impact potentially millions of such devices."[14]

EchoStar agrees this is a serious concern that merits further study, and expects that stakeholders from the unlicensed industry will have concerns about NextNav's proposals. NextNav should be required to provide more than general assurances that "NextNav . . . is completing technical analyses and 'will work with unlicensed users to understand their spectrum requirements.'"[15] NextNav asks the Commission to modify its M-LMS service and technical rules to "align with the Commission's flexible-use rules (e.g. Part 27) for mobile and/or fixed broadband operations, including full macro power limits and standard out-of-band-emissions limits," and eliminate the restrictions on real-time interconnection obligations, services that may be provided, and the amount of M-LMS spectrum that a licensee can hold.[16] These changes to the applicable technical rules could threaten the viability of existing unlicensed devices that rely upon the Lower 900 MHz Band.[17]

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[13] *Notice* at 2, *citing* 47 C.F.R. § 90.353(d).

[14] *Id.* at 4.

[15] *Id.*, *citing* Petition at 31.

B. LoRAWAN, IoT and Other Part 15 Devices

The Commission should take seriously the possibility of harm to Internet of Things ("IoT") services using the LoRaWAN standard and many other Part 15 devices. The Consumer Electronics Association reports that unlicensed spectrum generates $95.8 billion per year.[18] Under the successful Part 15 rules, the Lower 900 MHz Band today supports the connectivity of a wide variety of devices, including two-way radios and emergency radios, mesh networks, private networks, environmental sensors, baby monitors, remote controls, garage door openers, line of sight wireless controls, RFID readers, and wireless LAN point-to-point bridge links. Helium's "People's Network," a LoRaWAN network, uses frequencies in the Lower 900 MHz Band.[19] The consumers who enjoy these devices and the industries that make them deserve to be considered in the Commission's decision-making.

IV. CONCLUSION

For the foregoing reasons, the Commission should scrutinize the claimed benefits of the Petition, particularly as an alternative to GPS, before bypassing the chance to offer 15 MHz of low-band spectrum to the public in an auction. There could be multiple other technologies and spectrum bands that could achieve the same goals without the substantial potential harm to millions of unlicensed devices and services that the public relies on. No action should be taken on the Petition until all possible alternatives are considered.

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[16] *Notice* at 5-6; Petition at 29.

[17] *See Notice* at 4.

[18] Laura Ambrosio and Jim Fellinger, CTA Press Release, *CTA Research: Unlicensed Spectrum Generates $95.8 Billion Per Year*, Feb. 1, 2022, https://www.cta.tech/Resources/Newsroom/Media-Releases/2022/January/Unlicensed-Spectrum-Generates-95-Billion-Per-Year

[19] *See* https://www.helium.com/

Respectfully submitted,

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